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EXAMINER	
CHU, KIM KWOK	
ART UNIT	**PAPER NUMBER**
2653	16

DATE MAILED: 01/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/695,089	MAEDA ET AL.	
	Examiner	Art Unit	
	Kim-Kwok CHU	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/17/03 (paper 15)*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-16,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-16,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Remarks

1. Applicant's Remarks filed on December 17, 2003 have been fully considered.

(a) Applicant states that the Office Action provides no rejection of claim 20. Accordingly, the Final Rejection (paper 13) on September 24, 2003 is withdrawn.

(b) The amendment filed on December 17, 2003 is not entered and the following rejection is based on the Amendment filed on July 16, 2003 (paper 12).

(c) Applicant should be reminded that even the amendment is entered in the future, the feature "a lookup table" and its content "edge shifting values" are non-functional until they perform certain effects of reading the disk.

2. Applicant's Remarks filed on June 16, 2003 have been considered but they are not persuasive.

(a) Applicant states that the prior art of Fuji provides no disclosure or teaching of "information of edge shifting values of at least one of a leading and trailing edge of at least one recording pulse as recited in claims 7 and 8" (page 7 of the Remarks, lines 6-8). Accordingly, the claimed "edge shifting values" are data representing relationships between pulses. For example, Lee in Fig. 6 discloses that a lookup table 2 which generates recording pulses data (column 7, lines 54-64). The

recording pulse data is inputted to drive the power controller 4 which generates writing or recording pulses such as L1, L2, L3 etc. with variable edge positions between pulses (Fig. 1A and 1B). In other words, the generated pulses such as L1, L2 and L3 have edge shifting values as expressed in the form of mark lengths, mark spaces which are based on the look-up table's pulse relationship; and

(b) Applicant states that the edge shifting values is functional (operational) rather than being non-functional descriptive material. Accordingly, a look-up table is a non-functional means because in the claim, it is not being used by the storage device and is therefore just data stored on a disk.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

4. Claims 7, 9-16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji (U.S. Patent 6,310,846) in view of Lee (U.S. Patent 5,241,524).

Fuji teaches a recording medium having elements and means very similar to that of the instant invention. For example, Fuji teaches the following:

(a) as in claim 7, a disk-shaped substrate 40 (Fig. 4);

(b) as in claim 7, at least one track being provided on the substrate (Fig. 6a1);

(c) as in claim 7, a zone including at least one track (Fig. 8; a recording zone/area is an inherent feature of the recording medium 1); and

(d) as in claim 7, the zone stores a lookup table 57 which stores a pulse pattern (Fig. 2; column 4, lines 28-33).

However, Fuji does not teach the following:

(a) as in claims 7, 9-16 and 19, the lookup table having information about edge shifting values of at lest one of a leading and trailing edge of at least one recording pulse;

(b) as in claim 7, the edge shifting values are determined by combinations of a length M(n) of mark being currently written and at least one of a length s(n-1) of a space precedent to the mark and a length s(n+1) of a space subsequent to the mark, and which can be positive and negative;

(c) as in claim 9, a leading edge of a first recording pulse and a trailing edge of a last recording pulse of a plurality of recording pulses;

(d) as in claim 10, the edge shifting values are for a leading and trailing edge of a first recording pulse and a trailing edge of a last recording pulse of a plurality of recording pulses;

(e) as in claim 11, the edge shifting values are for a leading edge of a first recording pulse and a leading and trailing edge of a last recording pulse of a plurality of recording pulses;

(f) as in claim 12, the edge shifting values are for a leading and trailing edge of each of first and a last recording pulse of a plurality of recording pulses;

(g) as in claim 13, the edge shifting values are for a leading edge of a first recording pulse of a plurality of recording pulses;

(h) as in claim 14, the edge shifting values are for a leading and trailing edge of a first recording pulse of a plurality of recording pulses;

(i) as in claim 15, the edge shifting values are for a tailing edge of a last recording pulse of a plurality of recording pulses;

(j) as in claim 16, the edge shifting values are for a leading and trailing edge of a last recording pulse of a plurality of recording pulses; and

(k) as in claim 19, the edge shifting values are for at least one of a leading and trailing edge of one recording pulse for recording a mark 3Tw long where Tw is a time width.

Lee teaches a look up table 2 having the following features;

(a) which stores a list of pulse formation values (pattern) such as pulse widths, length and intervals (Fig. 6; column 7, lines 54-64);

(b) referring to claim 7, the lookup table having information about edge shifting values of at lest one of a leading and trailing edge of at least one recording pulse (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the

length of a mark/space being adjusted and therefore the leading and trailing edges of a pulse are being shifted);

(c) referring to claim 7, the edge shifting values are determined by combinations of a length M(n) of mark being currently written and at least one of a length s(n-1) of a space precedent to the mark and a length s(n+1) of a space subsequent to the mark, and which can be positive and negative (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of a pulse are being shifted);

(d) referring to claim 9, the edge shifting values are for a leading edge of a first recording pulse and a trailing edge of a last recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of a pulse such as a first recording pulse are being shifted);

(e) referring to claim 10, the edge shifting values are for a leading and trailing edge of a first recording pulse and a trailing edge of a last recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of pulses such as a

first recording pulse and a last recording pulse are being shifted);

(f) referring to claim 11, the edge shifting values are for a leading edge of a first recording pulse and a leading and trailing edge of a last recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of pulses such as a first recording pulse and a last recording pulse are being shifted);

(g) referring to claim 12, the edge shifting values are for a leading and trailing edge of each of first and a last recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of pulses such as a first recording pulse and a last recording pulse are being shifted);

(h) referring to 13, the edge shifting values are for a leading edge of a first recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading edge of pulses such as a first recording pulse is being shifted);

(i) referring to claim 14, the edge shifting values are for a leading and trailing edge of a first recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of a pulse such as a first recording pulse are being shifted);

(j) referring to claim 15, the edge shifting values are for a tailing edge of a last recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the trailing edges of a pulse such as a last recording pulse is being shifted);

(k) referring to claim 16, the edge shifting values are for a leading and trailing edge of a last recording pulse of a plurality of recording pulses (Fig. 6, column 3, lines 18-25; edge shifting can be interpreted as the length of a mark/space being adjusted and therefore the leading and trailing edges of pulses such as a last recording pulse are being shifted); and

(l) as in claim 19, the edge shifting values are for at least one of a leading and trailing edge of one recording pulse for recording a mark 3Tw long where Tw is a time width (Fig. 6; 3Tw is one of a mark length in the pulse train; column 8, lines 15-19).

As in claims 7, 9-16 and 19, a look-up table as a form of data stored in a recording medium such as Applicant's and Fuji's is considered as a non-functional descriptive material. And it is obvious to store any type of data such as Applicant's and Fuji's non-functional descriptive material on a disk.

With respect to the type of data in a look-up table, for example, Lee uses a look up table to store non-functional descriptive material such as a list of predetermined values of pulse widths, lengths and intervals etc. When there is a motivation of determining a predetermined shape of pulse/mark length, it would have been obvious to one of ordinary skill in the art at the time of invention to store Lee's mark length values in a look up table such as Fuji's, because the values of the mark length can be obtained instantly without going through a calculation process.

Furthermore, since Fuji stores a mark control pattern in his disk region 57, it would have been obvious to one of ordinary skill in the art to use a disk region similar to 57 as a look up table instead of Lee's RAM type lookup table, because hardware such as a RAM/ROM is not needed.

5. Claims 8 and 20 have limitations similar to those treated in the above rejection, and are met by the references as discussed above.

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231 Or faxed to:

(703) 872-9306 (for formal communications intended for entry. Or:

(703) 746-6909, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (703) 305-3032 between 9:30 am to 6:00 pm, Monday to Friday.

KC
1/12/04

Kim-Kwok CHU
Examiner AU2653
January 12, 2004

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